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METHODS AND OBJECTIVES IN TRANSPORTATION GEOGRAPHY

Benjamin E. Thomas

A method of research or teaching obviously affects the selection of material for consideration and the manner of presentation, and, though less obviously, the viewpoint, philosophy, and scope of the subject. American methods and objectives in the geography of transportation, both as a specialty and as a part of human geography, may well be examined to see what limitations they place upon the development of this emerging field.

Three major methods may be noted, emphasizing respectively: (1) the means of transportation, such as the types of animals or vehicles employed, (2) the nature of the goods carried, and (3) the routes followed by the various types of transportation and the resulting patterns on the earth's surface. An important objective is to describe the nature of transportation as a feature of the earth's surface and to explain *why* it occurs in a given place, time, and manner. All three methods do this. However, in moving toward the common goal of description, analysis and explanation it may be observed that concentration on the means of transportation stresses *how* and why, studying the nature of the traffic stresses *what* and why, and focusing on routes and patterns stresses *where* and why, goods and peoples are transported.

Each of the three methods may eventually consider much of the same material and many of the same concepts, such as that climatic and cultural differences from place to place are basic factors in trade and transportation and that land routes usually converge on mountain passes and on important trade centers. However, the *how* method may give more insight into cultural or human phases of the subject, the *what* method may provide more of practical value for economic or commercial purposes, and the *where* method may best outline certain regional differences and relationships.

A brief glance at typical books and articles is often sufficient to reveal the themes selected by the writers, even if they are not stated. The means of transportation or "how" method usually results in photographs or sketches of trains, wagons, boats, harness, sails, or saddles, but few or no maps; the products or "what" method provides lists of articles, statistics, graphs, and perhaps pictures of certain products; the routes and patterns or "where" method has many maps and perhaps some tables, but few or no photographs or sketches.

In the United States a great advance has been made in using traffic flow maps which combine the second and third methods, by showing *what* is transported *where*, and even *how much*. However, the third method, the showing of routes and patterns, is probably the one usually associated with American geography. There is the outstanding example of Mark Jefferson's maps of railways of the continents (from "The Civilizing Rails," *Economic Geography*, vol. 4, (1928) pp. 217–231) which appears in so many of our college textbooks. More recently Edward L. Ullman in "The Railroad Pattern of the United States" *(Geographical Review*, vol. 39 (1949) pp. 242–256) also used the routes and pattern method effectively, including enough of "what and how much" is transported, and "how" it is accomplished (centralized traffic control, etc.) to provide new insight into the geography of railways.

In developing the second and third methods, however, we have almost, if not entirely, lost sight of the values and objectives of the first. Ullman and Mayer, in

the chapter on "Transportation Geography" in *American Geography: Inventory and Prospect* (edited by Preston E. James and Clarence F. Jones, Syracuse University Press, 1954) faithfully present the dominant American viewpoint by considering the second and third methods in some detail and by generally ignoring the first. If transportation is considered only as a portion of economic geography our viewpoint is logical. The second and third methods (products and routes) fall largely within the economic category, while the first method (how various peoples travel and transport goods) is more commonly regarded as social, human, or cultural geography. In our zeal to provide statistical and cartographic material that is of practical value to city and regional planning, military logistics, and marketing we are slighting certain phases of transportation geography that are of value to history, anthropology, and regional human geography.

We sometimes equate our geography of transportation with the French "géographie de la circulation." It may therefore come as a surprise to some Americans to find that a large segment of the French school of *géographie humaine* omits our method of routes and patterns in favor of the means of transportation, or the first method. For example, Robert Capot-Rey in his *Géographie de la circulation sur les continents* (Gallimard, Paris, 1946) mentions only two methods of approaching his subject: by studying the means of transportation, making the work a part of human geography; or by studying the products and their movement, making it a part of economic geography. He makes no mention of the third or popular American method of maps, routes, and patterns. He selects the first method and does an excellent job of showing the way people travel and transport goods in various parts of the world, from great cities to remote forests and deserts, with reasons for the differences, and the consequences. The book has many photographs and drawings, but no maps.

It is commonly recognized by American geographers that undue concentration on the products, exports and imports, and statistics of the second method without considering causes, results, cultural aspects, locations, and other related phases of geography can result in shallow work of little permanent value to geography as a field of scholarship. Certain works in German "verkehrsgeographie" provide examples. We are probably doing well in combining much of the material, for economic purposes, into dot and isopleth maps, and into the route maps and flow charts of the third method, including statistical appendices where necessary. However, it is possible to trace products from origin to destination and provide useful analyses at the same time by bringing in the related physical, cultural, and economic factors. In practice, the method has often stressed the economic at the expense of the cultural.

Although the American school of cultural geography, in its concern with the origin and spread of the means of transportation, is not too far from the French human geography approach and the philosophy of the first method, recent trends in American geography swing far in the opposite direction. Four things contribute to this swing: (1) our economic and urban geographers have to deal with maps and traffic to solve certain problems; (2) many regional geographers appreciate the flow charts and other devices that outline functional areas and show regional relationships; (3) landscape purists hold that railways and roads, as "material, observable features of the earth's surface," fall more definitely within the scope of geography than the history and culture associated with the use of the reindeer and the camel; and (4) the increased desire for abundance and excellence in cartographic expression, regardless of basic philosophy, leads to an emphasis on routes and other mappable features. The combined effect has been a shift of emphasis toward the third method until American transportation geography, as a systematic subject and as a part of regional and human geography, is out of balance.

Probably several approaches, and all three methods, are essential to a balanced program of transportation geography. One can search in vain in the transportation chapter of *American Geography: Inventory and Prospect* for something that would indicate that American geographers could be interested in transportation in the regions beyond the railway and the paved road. Considered from the viewpoint of either the area or the people involved, much of the world consists of tropical forests, savanna lands, deserts, mountains, oriental humid lands, boreal forest, and tundra—regions where transportation might be of vital concern to the inhabitants and to the character of the region, and yet have nothing to do with railway freight rates, highway flow charts, and the capacity of seaports. The ox cart, for example, is still a vehicle of considerable importance in the world when one considers such regions as Latin America, Europe, and parts of Africa and Asia, and its study would probably require an investigation into cultural topics such as the domestication of animals and the development of various types of ox-drawn vehicles—the means of transport.

If we Americans were not so near-sighted from close work with our economic and statistical materials we might find amusing the implication in the previously mentioned chapter, that the study of transportation is handicapped "especially in the United States and Britain" by the inadequate statistical data. Let us hope that geographers from somewhere will provide illuminating studies on transportation in Ethiopia and Afghanistan long before those countries collect the tons of statistical data that are available in the United States and Britain.

Are we, perhaps, sometimes handicapped by narrow viewpoints and training? In interior West Africa, just north of Nigeria, trucks can be observed hauling bags peanuts southward over dirt roads to the railhead at Kano. For this traffic our American methods of routes and flow maps and our economic concepts such as cost-per-ton-mile would probably be appropriate, but there is also a stream of Moslem pilgrims bound eastward toward Mecca, mounted on camels, oxen, donkeys, and horses. The flow varies with religious dates and the custom of stopping to visit with friends, and other cultural factors. One can roughly place the home areas of the people from the languages they speak, the types of clothing, whether they ride donkeys or oxen, or whether the camel saddles are of Saharan or Sudanese types. The motives of the pilgrims and the concepts needed by the geographer to understand the traffic are largely cultural (and non-economic) in nature. Should not both peanuts and pilgrims be considered in a study of transportation? Even for a regional investigation that is not centered on transportation it seems that both should be studied and mentioned. For full understanding it may be necessary to probe to the origins of each, in both the historical and locational sense. Field techniques may be no less essential than statistical methods or economic principles.

The study of the economic phases of geography has provided some notable recent advances in American transportation geography, and an argument has been made above for a similar concern for the social phases. Likewise, the physical aspects are important. In the previously mentioned region of peanut and pilgrim traffic, climate influences the harvest season and the flow of peanuts, and a wet season floods the roads and brings all traffic to a halt. Many maps of "navigable rivers" in eastern Asia, South America, and Africa are of little value because the wet-and-dry climates actually provide constantly changing patterns of navigable waterways. Is not the application of our knowledge of climatology and drainage, and the mapping of the seasonal changes in dry and navigable segments of the streams, with causes and consequences, a logical part of transportation geography? The scholarly and practical values of such study are obvious.

In the United States the desire to give due weight to economic and cultural factors and to avoid the charge of environmental determinism has led many

geographers to abandon the approach in which the effects of physical conditions on transportation are shown. Perhaps it is time to stop over-compensating. Fields in which environmentalism is not an issue have no qualms in pointing out the influence of physical conditions. Numerous military experts and historians have stressed that the Russian climate converted dirt roads to quagmires in World War II, bogging down the invading columns of German trucks and tanks. Everyone familiar with air travel realizes that storms, bad flying weather, and fog-bound airports can result in delayed flights and shifts in landing places. For the aspects, times, and places where physical conditions are of prime importance one should not hesitate to mention them, and their effects.

Physical influence, however, is only a part of the whole subject, and only in certain situations would a "natural cause and human effect" approach be sufficient by itself. Such features as vehicles, products of commerce, wagon roads and railways arise, flourish, and decline or disappear, and experience with these variations has led to the view that they are more commonly associated with culture and economy than with actual physical changes in climates or landforms.

Centering attention on the routes and statistics of transportation, for the zones of railways, seaports, modern cities, and paved highways is necessary and decidedly worthwhile for certain purposes, and no doubt most geographers will work in these areas of great economic importance. But if there is a tendency for this to become both the focus and the circumference of the geography of transportation in America, it is a form of academic provincialism that should be resisted. Likewise, the opposite extreme of considering only topics such as outrigger canoes in the South Seas or llamas in the Andes as worthwhile for scholarly investigation by geographers should be avoided. Geography, by its very nature, requires a philosophy and suitable methods for study of all regions of the earth, and this applies to transportation as well as other phases.

For the near future we need many fresh and varied studies of transportation geography to make better use of available methods, to test the unexplored portions of the field, to improve our general grasp of the subject, and to bring new methods, concepts, and opinions into the open. In this process a well-rounded training in geography, a broad view of methods and objectives, and a tolerance of all philosophies that have something to contribute are valuable assets.

DOTTING THE DOT MAP WITH STEEL DRILL STAMPS

William G. Byron

Dots on dot maps should be round and, except intentionally, unvarying in size. Irregularities in dot area that may not be readily noted after reduction of the map nevertheless affect the visual impression of density. Under some circumstances one may prefer not to reduce the drafted map greatly in reproduction, yet small dots that are made with standard cartographic tools tend to be unsatisfactory for critical requirements.[1] Most drafting equipment is designed primarily to make lines, not dots. Neither the flow of ink on the pen nor the blotting characteristics of the paper can be precisely anticipated from dot to dot.

Furthermore the cartographer constructing a complex map may wish to use several dot sizes to represent discontinuous distributions occurring in various

[1] See Birch, T.W. "Dotting the Dot map," in Wright, J.K., Jones, L.A., and others. *Notes on Statistical Mapping: With Special Reference to the Mapping of Population Phenomena.* Published jointly by the American Geographical Society and the Population Association of America. New York, 1938: 33–37. See also, Best, S.E.J. "A Method of Making Dots on Maps," *Observation*, 2 (Oxford, Summer), 1927: 113–115.

degrees of concentration. This technique is commonly used to portray population distribution. Ideally, the cartographer should be free to choose from a great range of diameters so that the dot will be quantitatively proportional to the statistics they represent. A compass or drop pen can be used for the larger circles, but not for graduated small point symbols. Conventional equipment such as the LeRoy and the Barch-Payzant pens are not manufactured in enough different sizes to yield a truly graded sequence of dots.

All of these problems can be solved by printing the dots on the map manually, using block printing ink and steel drills as stamps. The investment is negligible and the tools are easy to obtain. Once properly equipped, the cartographer can make countless numbers of very precise point symbols in a wide range of sizes, without distortion due to either equipment or paper. The required equipment includes: 1) steel drills of the proper shank diameters; 2) an oil base ink. Speedball Oil Ink for block printing, available in tubes from stationery and hobby stores, is recommended; 3) a small glass plate approximately 5" x 7" in size; 4) a small rubber roller of the type used in photographic darkrooms. The investment will normally range from $2 to $5, depending upon the number of drills required.

The procedure is simple. A small amount of ink is squeezed from the tube onto the glass plate, then is rolled out on the plate with the rubber roller. The ink becomes a thin, uniform film on the glass. The steel drill, with the butt end of the shank ground flat, is then inked from the plate and the dot is stamped onto the map. The stamp must be re-inked each time a dot is made so that all of the symbols will be of a uniform density and size. Many manufacturers provide drills that have had the butt end of the shank ground flat at the factory. Others sell their drills with butt ends that are domed. In the latter case it is necessary to grind the ends flat, using either a bench grinder or an ordinary oil stone. Some care should be taken to insure that the edges are not rounded and that the new face is a right angle to the shank. For best results, the surface scratches left by the rough grinding should be removed with a fine grain stone.

No other method known to the author can approach this for uniformity, versatility, and precision. Unlike other tools, the drills do not wear out or change diameters with protracted use. With 169 different drill diameters between 0.0135 and 1.0000 inches, 136 of which are smaller than 0.5000 inches (see Table), the possible dot combinations should meet almost any conceivable need. Normally, most if not all of these drill sizes are readily available from most large hardware or tool supply stores.

There are also some special advantages in using the oil base printing ink. The ink yields dense black dots (or colored ones if desired) with very uniform diameters. Since the ink will not flow, dots can be spaced close together without risking coalescence. The dots may be easily removed by scraping if an error is made, and dots may be added to scraped areas without risk of blotting. One can ink for several hours without cleaning the glass plate, since the ink resists clogging.

There are three disadvantages to the technique. First, the system is approximately 25 percent slower than dotting with standard cartographic tools such as the LeRoy equipment. Allowing time to locate the points where the dots belong, one can make approximately 15–20 dots per minute. Since it takes from 8–36 hours for the ink to set, special care must be observed to insure that the dotted areas are not smeared. It also takes a little practice to make perfect dots. Once the proper rhythm and pressure is established, however, the dots everywhere will be the same.

The oil base printing ink and steel drill stamps may be used effectively on any map requiring relatively small, highly uniform dots. The symbols reproduce

exceptionally well, being dense black points, regular in size and shape everywhere on the map. This is especially advantageous in the areas that approach but do not quite reach the highest density conditions. Coalescence can be critically controlled because the inter-dot spaces within communities of high dot concentrations will not be affected by unanticipated differences in the diameters of the symbols.

With the great range of dot sizes available the usual procedure of determining a sequence of graded point symbols may be considerably refined. Instead of using the relatively few graduations that are determined by pen manufacturers, the cartographer may select whatever dot diameters best fit a given requirement. Other dot making systems may be somewhat faster, but certainly none yield such precise results.

Partial List of Standard Drill Sizes and their Diameters

Fractional Sizes	Dec.Equiv.	Number Sizes	Dec. Equiv.	Letter Sizes	Dec. Equiv.
1/4	0.250	---	-------	E	0.250
15/64	0.234	1	0.228	D	0.246
7/32	0.219	2	0.221	C	0.242
13/64	0.203	3	0.213	B	0.238
3/16	0.187	4	0.209	A	0.234
11/64	0.172	5	0.205	-- ----	-------
5/32	0.156	6	0.204	----	-------
9/64	0.141	7	0.201	----	-------
1/8	0.125	8	0.199	----	-------
7/64	0.109	9	0.196	----	-------
3/32	0.094	10	0.193	----	-------
5/64	0.078	11	0.191	----	-------
1/16	0.062	12	0.189	----	-------
3/64	0.047	13	0.185	----	-------
1/32	0.031	14	0.182	----	-------
1/64	0.016	15	0.180	----	-------
-------	-------	16	0.177	----	-------
-------	-------	17	0.173	----	-------

Range of Diameters

Diameters of Number Sizes range from 0.0135 to 0.228 inches.
Diameters of Fractional Sizes range from 1/64 to 1 inch.
Diameters of Letter Sizes range from 0.234 to 0.413 inches.

Note: All of the above numbers are given in parts of an inch. The complete list of drill sizes is available in most hardware stores.

A NEW GEOGRAPHICAL RESEARCH AID IN THE RUSSIAN LANGUAGE

Theodore Shabad

A useful geographical research aid became available last January when the Soviet Academy of Sciences began publication of a separate geography series as part of its bibliographical digests.[1]

The bibliographical digests cover the following fields: astronomy, geodesy, biology, geography, mathematics, mechanics, physics, chemistry, biological chemistry, automation, radio, electronics, geology, machine building, and metallurgy. The digests, which appear monthly in some fields and semi-monthly in others, include abstracts from all Soviet and about 9,000 foreign serial and non-serial publications received from about 80 countries. They also list patents, books, and dissertations. Until last year, geography and geology were combined in a single digest. Starting this year, the two disciplines are treated in two separate expanded series. The following description pertains specifically to the geography journal.

Each monthly issue contains about 2,500 entries, organized in two major sections: physical geography and regional geography. The physical geography section contains materials devoted to the study of physical geographic processes (including those exemplified by a limited area) and specific systematic topics. The regional geography section contains materials devoted to the complex physical geographic description of regions, countries and groups of countries, as well as all materials in the field of human geography.

Each issue opens with a general section, devoted to general questions, the history of geography and geographic personalities, the work of geographic institutions and organizations, teaching methods, popular geographic literature, reference books, dictionaries, and bibliographies. This is followed by a section on cartography, broken down in turn into general questions, history of cartography, mathematical cartography, compilation, editing and publishing of maps, and air photo interpretation.

The physical geography section contains the following subdivisions: general, paleogeography, geomorphology, meteorology and climatology, hydrology of the land, oceanography, snow cover, glaciers and permafrost, soils, biogeography (including plant and animal geography of the land and biogeography of inland water bodies and of the oceans).

The regional geography section opens with a general subsection devoted to theoretical and general questions of regional and economic geography, to topical studies covering the whole world or groups of countries, and to foreign trade. This is followed by a country-by-country breakdown, of which the main groupings are: USSR, Europe outside the USSR, Asia outside the USSR, Africa, North America, Latin America, Australia and Oceania, Antarctica.

Following standard bibliographical practice, each entry lists the title of the article or book in Russian translation and the name of the author in Cyrillic transcription, followed by the relevant data in the original language. Most entries refer to articles in serial publications, but there are also references to books, reviews of books, dissertations, patents, maps and atlases.

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[1] Akademiya Nauk SSSR. Institut Nauchnoy Informatsii (Academy of Sciences of the USSR. Institute for Scientific Information). *Referativnyy Zhurnal — Geografiya* (Reference Journal — Geography), Moscow, Akademiya Nauk SSR (monthly). Annual subscription $26. Can be ordered from Four Continent Book Corp., 822 Broadway, New York 3, New York.

The most important feature of the journal is the length and the nature of the abstracts. The length of the abstracts varies from a line or two to as many as 1,000 words. An average length would seem to be about 200 or 300 words. They are not the general résumé type of abstract. Instead they seek to extract whatever useful specific information the article contains. For example, the abstract of an article on cliff retreat in the southwestern United States reproduces idealized sketches from the article illustrating successive stages in cliff retreat; the abstract of an article on the distribution of ethnic minorities in Yünnan Province, China, reproduces maps showing the distribution of the minorities; an abstract of an article on the Volta River project in the Gold Coast gives a map showing the principal features of the project, and so forth. In most cases, the relevant information required by a researcher seems to be given directly in the abstract.

The geography journal abstracts all articles of geographic interest found in the serials received by the Institute. Actually only a small percentage of the articles are culled from professional geographic journals. The great majority are taken from technical, scientific and engineering periodicals. Thumbing through a typical issue, one finds abstracts from the *South African Footwear and Leather Journal* ("Fewer Europeans Employed in the Footwear Industry"), *Nenryo Kyokaishi*, journal of the Fuel Society of Japan ("Oil and Japan's Fuel Problems"), *Revue Forestière Francaise* ("The Problem of Crop-Forest-Pasture Equilibrium"), *Photogrammetric Engineering* ("Exceptional Meander Scars and Their Significance in Determining the Direction of Stream Flow").

The journal does not emphasize Soviet periodicals. In fact, the original purpose of the abstracts was to acquaint Soviet geographers with work being done abroad. The average issue has 260 to 270 pages, of which about 120 pages are devoted to physical geography and 140 pages to regional geography. Of the total space allotted to regional abstracts, the general section occupies 15 pages, the Soviet Union 20, the rest of Europe 20, the rest of Asia 20, Africa 20, North America 10, Latin America 10, Australia and Oceania 5. The emphasis on Asia, Africa, and Latin America is quite marked. It is in keeping with the new Soviet policy of studying the underdeveloped lands of the world. This orientation is also evident in the great weight given to articles dealing with industrialization, development of transportation networks and resource development.

The tenor of the abstracts is factual and informative. There is no ideology or propaganda. This is especially evident in the abstracts of articles written abroad about the Soviet Union. For example, Allan Rodgers' recent article in the *Annals* of the AAG on the Soviet pulp and paper industry is abstracted as follows: "The article analyzes the raw material base and the distribution of the pulp and paper industry in the pre-revolutionary, pre-war and post-war periods. The present distribution is examined from the regional point of view. In the author's opinion, natural resources and location favor prospective paper industry developments in the European North and in the Urals. The author evaluates the prospects of development of the Soviet paper industry. The article includes schematic maps showing the forest regions, shifts in paper production from 1913 to 1937, and the distribution of pulp and paper producing centers in 1936 and 1950." This uncritical abstracting is carried to the point where factually wrong information about the Soviet Union may be included. For example, the abstracts of a Bulgarian article about the Soviet petroleum industry includes Chapayevsk among oil centers that have recently arisen in the Volga–Urals region. Actually Chapayevsk is a chemical center dating from the 1920's, long before oil was struck in the Kuybyshev area.

The digest is especially valuable in abstracting articles from serials that are normally not available in the United States. For example, it abstracts at considerable length articles from the Chinese Communist geographic magazines

Ti–li Chih–shih (Geographic Knowledge), *Ti–li Hsüeh–pao* (Geography Journal) and *Lü–hsing–chia* (Traveler). This is, of course, in addition to any other articles of geographic interest in Chinese industrial and technical journals. The same service is preformed for other countries of the Communist bloc, including North Korea, North Vietnam, Outer Mongolia, and the Eastern European satellites.

How can non-Russian geographers make use of this digest? There is, of course, the language problem, but non-Russian-language articles are identified in the original language and can be found even by the non-Russian reader, and an author index lists names in the original alphabets. The digest can be used at least as an index to geographic articles published throughout the world, provided the reader learns how to identify the country and subject headings. This requires merely a knowledge of the Cyrillic alphabet. With a knowledge of a smattering of Russian geographic terms, the research geographer has at hand a useful new tool.

FURTHER COMMENTS ON "A SEMINAR IN PROFESSIONAL PRESENTATION"

Howard G. Roepke and Jerome D. Fellmann

The July 1955 *Professional Geographer* contained a report on a seminar in the presentation of geographic materials conducted for graduate students in geography at the University of Illinois. Since several geographers have indicated their intention to initiate similar seminars in their own Departments, we feel it worthwhile to report on further successful experimentation in the organization of the seminar.

The principal change in organization during the past year has been alternation of written and oral assignments on the same topics in successive weeks. Previously the two forms of presentation were considered as distinct blocks of work, each occupying one-half of the semester. This change permits more emphasis on the basic differences between techniques of written and oral presentation and reduces the amount of substantive research preliminary to preparation of papers on new topics.

The intent of the seminar is to emphasize the need for presenting geographic ideas logically, coherently, and with the techniques best adapted to the particular form of presentation selected. The key, of course, is the *form* of presentation, because written and oral work obviously differ in the degree of detail permitted, in the illustrative devices employable, and in the type of emphasis necessary. When written and oral work were treated in separate halves of the semester, those differences were sometimes obscured. When the same subject and the same basic data are treated in different form at successive class meetings, the differences in techniques can be more effectively illustrated, and the students become more accustomed to thinking of appropriate presentation technique as an indispensable part of the writing job.

The students have welcomed the greater emphasis on an effectively-presented finished paper and the increased investment of time in the reworking and polishing of papers made possible by reducing the collateral research. Any problem of exact––or even substantial––duplication of successive papers is forestalled by making the two assignments on each topic considerably different in length.

Emphasis on presentation is also furthered by assignment of topics with which the student is known to be familiar. At the first class meeting, each student submits a list of systematic and regional topics on which he has already done research. All individual assignments are based upon these topics.

Grammar is of necessity continually stressed, not *per se*, but as incidental to the objective of clear, logical exposition of geography in those forms (other than classroom work) most used by professional geographers. The exercises on "written" geography include at least one assignment in book reviews, as previously reported. A panel discussion session has been added, scheduled following the book review assignment to maintain the alternation between written and oral work. Books selected for review are related to two or three definite topics. These topics, and the points of view of the books reviewed, form the subjects of the panel discussions.

We have also found it desirable not to pre-arrange the schedule too rigidly. Differences between groups in ability, rate of progress, and technical skills necessitate adjustment in emphasis and timing of assignments throughout the program. The changes in the seminar outlined in this report have increased its effectiveness by sharpening the focus on its purpose, while reducing the time-expenditure required of the students. No way has yet been found to reduce the large demand on staff time made by the seminar, but the Department considers that demand justified by the students' improvement in the presentation of geographic material, a significant part of preparation for professional geographic careers.

A MULTIPOINT DRAFTING FOUNTAIN PEN

Robert M. Basile

A fountain pen for drafting purposes can be made by modifying a ball point pen to hold a Leroy pen from a K&E lettering set. All sizes of Leroy pens can be inserted, resulting in a versatile and easily manipulated ruling pen.

The pen has several advantages. It can be used in much the same manner as a straight-line ruling pen and has a much greater ink capacity. Ink does not dry as rapidly as in a ruling pen; in a pen left filled with drawing ink and capped for two or more hours, the ink flowed freely when required without any priming. Lessened drying of ink means that many more short lines may be drawn without the necessity of tedious stopping, cleaning, and inserting more ink, and thus means greatly increased drawing speed.

With a slight shake or tap of the point on a blotter, the cleaning pin will clear the ink passage if the ink should dry, as it may occasionally in the smaller pens or after a long period of nonuse. Most of the Leroy pens used in this manner dripped no ink off the nib when the pen was shaken to loosen dried ink, although this was not true in all cases. This varies with the size of pens, with different pens of the same size, and with the age and use to which the pen has been put.

The pen works very well in making dot maps. With the many sizes of Leroy pens available it is a simple matter to select the right pen for the job required. Furthermore, since the pen is held perpendicular to the paper it is more easily controlled than the Payzant or Leroy pen staff now available. The pen has some disadvantages. With too vigorous shaking, ink may drop into the barrel of the pen. However, it seldom takes more than a slight shake of the pen to clean out any dried ink. A blob of ink may form on the nib of the pens in the smaller sizes where the cleaning pin projects beyond the end of the pen nib. This has not occurred in the larger pens nor in new pens of the smaller sizes. When used on some drawing papers the edges of the lines formed are not as sharp as when drawn with a ruling pen, but on tracing cloth this pen produces as sharp a line as does the ruling pen.

The following directions and Fig. 1 apply to conversion of the Shaeffer ball point pen, for which a refill screws into a metal tip which in turn screws into the barrel of the pen. This refill is the only part to be modified, except that some of

the Shaeffer pens have plastic tips with approximately a quarter-inch of plastic above the threaded portion which may have to be cut off. The refill includes a brass tip which holds the ball point, a threaded shank, and an aluminum cap enclosing a plastic ink sack. The threaded shank is the only part to be salvaged. First, with a hack saw, cut off the brass tip and ball and discard. Then carefully cut through the aluminum cap at the point where it is crimped onto the threaded shank. The aluminum cap is thin and needs only to be cut in two or three places, after which it can be easily broken off. Discard the cap along with the ink sack it encloses. The threaded shank that is left is about an inch long. It is used to clamp the Leroy pen inside the metal tip and to increase the ink capacity of the pen. Using a 9/64-inch drill, enlarge the hole in the threaded end of the shank, or "clamp" as it is labeled on the drawing, to a depth of 3/8 to 1/2 inch. This opening acts as a guide for the cleaning pin head of the Leroy pen. For a snug seating of the shank on the rim of the Leroy pen that will prevent ink leakage, the threaded end of the shank should be tapered evenly all around. This is done by fastening the shank in the drill chuck threaded side out. With the drill in operation, fine sandpaper or emery cloth held to the tip at about a 45 degree angle will produce a satisfactory bevel. Place the Leroy pen in the metal tip at the top or widest end and screw the shank in snugly. This will secure the Leroy pen firmly in place so that it will become an integral part of the fountain pen. In most cases the Leroy pen will slip easily into the metal tip taking the place of the original ball point. Some of the Leroy pens are of slightly larger diameter and may have to be pushed lightly into place, or it may even be necessary to enlarge the opening in the metal tip slightly. Screw the pen barrel to the metal tip and the pen is assembled and ready for use. When shaken gently the cleaning pin should move freely within the Leroy pen and shank.

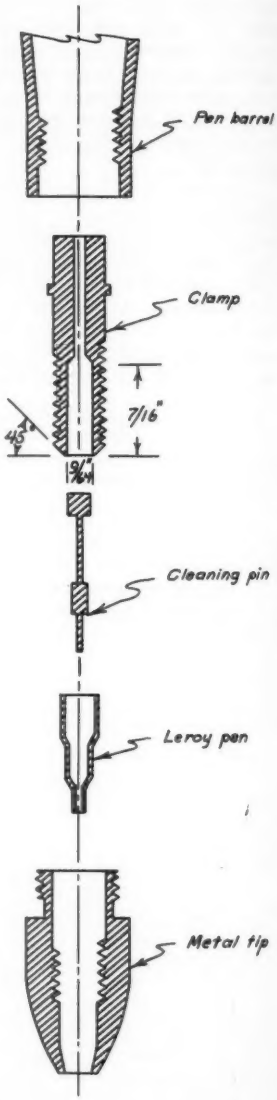

Figure 1. Expanded drawing of fountain pen assembly. Original drawing 13 inches long.

To fill the pen remove the barrel, fit the end of a dropper-type filler snugly in the opening at the top of the shank, and fill until ink shows at the pen nib. Use with a beveled-straight edge.

The fountain pen is more satisfactory than the ruling pen for making bar graphs, particularly for bars within the size range of available Leroy pens or that are completely inked in. Since the ordinary ruling pen must not be used except for drawing relatively thin lines, in making a bar graph the inking in between lines becomes another drawing operation. The multipoint fountain pen can be used for any line up to the largest pen size available without the necessity of this second time-consuming step. As a ruling pen of large ink capacity it is most satisfactory, as Figure 1 will attest. This drawing of the fountain pen parts was made in its entirety with this pen, using Leroy nibs 1 and 0. Number 0 was used for the free-hand lettering. Number 1 was used without refilling for the drawing itself. In fact, there was enough ink left in the pen for another drawing of that size.

THE STUDY OF GEOGRAPHY IN WEST GERMANY

Dr. Klaus Schroeder
Translated by George W. Hoffman

Study at universities and other institutions of higher education in West Germany and West Berlin generally begins after the final examination or graduation examination (Matura), which can be taken after thirteen years of primary and secondary school, with satisfactory performance in all high school subjects. The final examination consists of seven subjects at the most: German, Latin, one other foreign language, mathematics, one field of natural science, history, and art or physical education. At about nineteen years of age the student can enroll at a university or some other institution of higher education such as a school offering business, education, or other professional training. Due to the newly introduced military service in West Germany, the average age of students planning to enter universities will be twenty-one years of age starting with the winter semester of 1956/57.

Universities usually have faculties of Philosophy, Natural Sciences, Economics, Law, Theology, and Medicine. Geography can be studied at sixteen universities, eight technical schools, and eight other institutions of higher education in West Germany and West Berlin. Usually the student enrolls in his home-town university or institution in order to keep down his living costs, but goes elsewhere for further study, the choice of two or even three different schools being based on personal desires and field of study.

The student must decide upon enrollment whether he is going to choose geography as his major or one of his two minor studies. Since his actual interests and talents often become obvious only after enrollment a switch from major to minor or even from one field to the other is quite common. The most favored combinations with geography as a major are: geography, history, and one foreign language; geography, botany, and zoology; geography, geology, and geophysics; geography, economics, and selected work in business administration. Geography is very often chosen as a minor by the students of history, geology, biology, meteorology, linguistics, and economics.

The study of geography continues through four years or eight semesters. The winter semester usually begins on November 1 and lasts through March 1, and the summer semester on May 1 and lasts through August 1. Between these semesters there are semester vacations when no classes meet.

Both introductory and advanced geography are presented through lectures, laboratories, seminars, staff meetings (colloquia), excursions, and through

individual study. With no set curriculum or course requirements, students can and must choose for themselves the courses and labs which they want to attend, except that attendance at specific labs is a prerequisite for certain seminars, and attendance and participation in a certain number of labs, seminars, and field trips is required. Requirements for the exams at the end of the eight semesters include very detailed knowledge of such fields as morphology or the regional geography of North and South America, that the student must obtain during four years of study. How he obtains it is his private affair.

The lectures, from two to four hours a week during a whole semester, form the basis of learning at every institution and cover general geography as well as regional geography. The lectures, not customarily followed by students' questions, sometimes deal with a broad field of geography, and at other times with more specialized aspects. Students cannot expect that all the fields of geography will be presented in the course of their study. The purpose of the lectures is to stimulate students' initiative and not to submit a mass of material. Attendance at lectures is voluntary. Examinations are given only to applicants for scholarships. Students are on their own, have their own choice as to the type of courses desired, and when to attend classes. A freshman student may be in the same class as a candidate for a final examination.

The beginning student sometimes finds this procedure extremely difficult, since he must from the very beginning rely upon his own initiative and study. However, enough literature is quoted at the lectures to give sufficient basis for further study, and labs assume an important role.

The two-hour weekly labs introduce the students to the field of general geography or to certain specialized topics, or to techniques such as cartography, which is given great emphasis. Completion of lab exercises at the outset is recommended. Students discuss geographical problems with the instructor, write term papers or draw maps at the completion of their lab studies. Attendance at labs is registered. A certificate of attendance is important and often essential for participation in final examinations and for admission to specific advanced seminars.

Students may obtain permission to attend a seminar only after the fourth semester. Since previous attendance at labs is required, only advanced students participate in these seminars, that usually meet two hours a week. Every semester a new specialized topic is discussed, e.g. "Problems of climatic morphology," or "The economic geography of tropical Africa." All participants must present a one-hour report on one of the problems of the major theme. Sometimes the one-hour report is followed by a half-hour counter report. Discussion and criticism follow under the instructor's supervision. The number of participants in a seminar is limited, to obtain full participation by every student. Attendance at these seminars is certified and must be presented at the final examination.

The so-called "colloquia" are another important medium in the study of geography. Twice monthly all members of a department and interested members of other departments, as well as candidates for a degree meet in the evening hours. Either the candidate for the degree reports on his work, or the instructors report on their research. When colleagues from other universities or foreign countries are invited to lecture, the lecture is always followed by discussion.

Participation in several field trips is a prerequisite for admission to the final examinations. Field trips may cover trips to nearby areas or urban studies on weekends or may extend over two or three weeks during semester vacations. Great emphasis is put on training of the "sense of observation." These are both "work" and "survey" field trips. Work field trips have headquarters in a fixed place, for research on geographical problems in the surrounding areas. Survey trips, usually in a bus, cover considerable territory, with comprehensive discussion of the day's observations in the evening. The student keeps a daily record and after returning

every participant must choose and present a report, based upon his observations, on a special problem of the area visited. Almost every geographical institute has a special fund for field trips that pay part of the expenses of participants.

As can be seen, much emphasis is placed on individual study and initiative. Conceivably, a student could take his final exams without ever attending a lecture, but it is impossible to pass an exam without systematic and thorough study of the literature. Semester vacations, more than any other time, provide time for reading.

After at least eight semesters, students can apply for either of two final examinations. The so-called "state examination," preferred because it makes entrance to state schools possible, covers only subjects that are taught in advanced secondary schools. The so-called "diploma examination" is a University examination, in which various combinations of topics are possible. The student must submit a written report for both examinations after four months. This report has to prove that the candidate is capable of independent work. The topic is assigned by the examination board based on the suggestions of the instructor. The student usually reports about his work in the colloquia. In addition, students must take a written examination (Klausur) on a topic not connected with the paper described earlier, choosing one of three themes. The final step is a one-hour oral examination by the instructor before an examination board. Knowledge in all fields of geography is required, and special knowledge in one area of regional geography is expected. The oral examination stresses geographic thinking, the student being expected to recognize the causal connection between the geographic factors in different regions of the world. Little emphasis is given to knowledge of pure facts that can be obtained from any encyclopedia. If geography is chosen as a minor, home-paper and special written examinations (Klausur) are deleted, and the oral examination lasts only half an hour. The so-called "Promotion" examination is a third alternative taken only by about two percent of the students.

Before commencing work on a doctoral thesis, the student must pass either the state or the diploma examination.

The thesis problem is either agreed to or assigned by the instructor, and usually requires about two years of work. During that time a student specializes in his work, either by self-study or in his dissertation. The result of his work is reported and criticized in the colloquia. Oral examination comes after the dissertation has been accepted. The one-hour examination is open to the general faculty, and knowledge in all fields of geography is required. The examination can be conducted by one or two instructors. Examination on minor subjects lasts thirty minutes each. If the examination is unsatisfactory, it may be repeated in six months. After copies of the dissertation have been turned in, the candidate receives from the dean the title Dr.rer.nat., if the degree is from the Natural Sciences faculty, or the title Dr.Phil. if from the Philosophical faculty. "Promotion" can be passed with: rite, cum laude, magna cum laude, or summa cum laude.

The majority of the graduates teach at advanced secondary schools. Comparatively few go into business. Regrettably, few secure jobs in the State-Planning Commission. Those jobs are usually occupied by architecture and law graduates. There is very little opportunity for geography graduates in the federal or state civil services.

This information about the study of geography in Germany is, naturally, only general. In detail there are many deviations, since there is no uniform educational policy in West Germany. The individual Federal Republics have cultural autonomy. The above information does not apply to the Soviet Zone of Germany and East Berlin, where the study of geography, as well as other studies, has had to adjust to the Soviet system.

ANNUAL MEETING – CINCINNATI – MARCH 31 TO APRIL 4

The Program Committee's general plan of the meeting, approved by the Council, was published in the May issue of *The Professional Geographer*. The membership of the Program Committee, reflecting wide regional representation, is included among the lists of committee members elsewhere in this issue.

The program will include both invited and voluntarily contributed papers. December 1 is the deadline for receipt of abstracts by the Chairman of the Program Committee, Alfred H. Meyer, Valparaiso University, Valparaiso, Indiana. The abstract is not to exceed 250 words in length, and since it is the primary basis for judging and selecting a paper by the Committee, the author should make certain that it properly reflects the actual content of his paper. The relative quality of papers and time availability are necessarily selective factors in composing a program of this type. The author should also make sure that there are no typographical or other errors in the abstract, since the tight schedule for printing the Program does not allow time for editing.

So as to make abstracts readily available to Program Committee members and the editors of the Association's journals, it is requested that eight (8) copies be submitted. To insure legibility, it is suggested that two sets of copies be typed separately. All copies should be on 8½ x 11 paper, the originals on a good white bond and the carbons on onion-skin or other good tissue.

The following rules, formulated last year, will again apply in preparing the abstract:

1. Abstracts must be doubled-spaced with reasonable margins.
2. The name of the author must appear at the head of the abstract typed in upper-case letters and beginning at the left-hand margin.
3. The title of the paper should begin two lines below the author's name and at the left-hand margin. It should be typed in both upper- and lower-case letters *and* should be underlined.
4. The body of the abstract should begin two lines below the title and should be typed with paragraph indentations.

To facilitate Committee program planning and the preparation of progress reports for publication in *The Professional Geographer*, it is urgently requested that abstracts be submitted at your very earliest convenience.

[*Note:* If more papers are submitted that can be read in the available time, the Program Committee wants to make its selection in the best interest of the Association members. Aware that abstracts have not always been adequate as a basis of selection, the Committee considered various alternatives. It would be fine if all papers in their entirety could be read by all of the Committee, but already established deadlines will not permit this. Long abstracts in place of short ones would impose printing costs that the Association is not prepared to bear. Long abstracts for the Committee's use in selection, in addition to short ones for publication in the Program and in the *Annals*, would entail extra work for authors, and might not solve the Committee's problem. The Committee therefore concluded that, for this year at least, the best alternative is to request the cooperation of authors in presenting 250-word abstracts that tell clearly what the paper contributes. It is suggested that authors test their abstracts on someone and rewrite if necessary to ensure clarity. Ed.]

EXECUTIVE COMMITTEE ACTIONS

At its meeting on June 9, 1956, the Executive Committee took the following actions subject to ratification by the full Council:

1. Approved the recommendation of the Publications Committee that the Association proceed with a program of monographs in cooperation with Rand McNally and Company, and that the AAG appoint an editor to have full charge of the program under the general oversight of the Publications Committee and assisted by an advisory committee of three.
2. Considered an inquiry from the Association of Brazilian Geographers with reference to a Federation of Geographic Associations of the Americas; authorized a reply stating that the Association of American Geographers does not favor establishment of such a federation; authorized President Jones to present the views of the Association at any meeting that may be held on this subject during the International Congress in Rio de Janeiro.
3. Approved the recommendation of the Publications Committee that the *Annals* be printed by the Allen Press of Lawrence, Kansas, beginning with the next volume.
4. Considered a proposal by University Microfilms, Ann Arbor, Mich., to microfilm the *Annals;* authorized a reply stating that microfilms are already available, through vol. 40, from the Library of Congress.
5. Rejected a suggestion that the Association contribute annually to the AAAS $25 per representative on the AAAS Council.
6. Approved a letterhead for the Central Office.
7. Appointed a member of the Research Grants Committee to replace Bowman Hawkes and reappointed International Fellowships Committee.
8. Authorized printing of 4,000 copies of the Directory–Handbook.

INFORMAL DISCUSSION SESSION SUMMARIES (Continued)

Nodal Regions. Joint session with the Regional Science Association. Walter Isard, presiding. Procedure: panelists and general discussion. Panelists: Derwent Whittlesey, Harvard University; Walter Isard, Massachusetts Institute of Technology; and Howard L. Green, Stop and Shop.

Whittlesey opened the discussion by distinguishing between two kinds of conceptual region—the uniform region, widely used by geographers, and the more recently defined nodal, or functional region. The uniform region is defined in such a way that its various characteristics are essentially homogeneous, whether they be natural characteristics or man-made. The nodal region is distinguished by a functional focus, or node (or series of nodes) with which is associated an area of activity related to the node by means of a complex of communication links, or ties. The node would normally be determined by the focussing of human activity, such as occurs at an urban center, and the limits of the region determined by the area of influence associated with the node, such as a metropolitan area. On a larger scale than that of the city, Whittlesey gave as an illustration the wheat growing area of the U. S. with the nodal focus at the wheat trading center in Chicago. On a smaller scale than that of the city, he suggested that a department store might constitute the nodal focus of a related market area. It is also possible that a nodal region may be defined in purely physical terms, as for example, a river system with the node at the mouth of the river. Whittlesey concluded with the observation that a given area, such as the wheat growing area of the U. S. may be considered both as a uniform region and as a nodal region.

Taking up the general statement of the nodal concept, Isard presented a synthesis of various theories of nodal relationships and regional definition. He started with the traditional Weberian location analysis, using locational and weight triangles to determine the production point of minimum transport cost, to which he added the "polar" type of analysis developed originally by Palander. Into this combination were injected facts of additional commodities, additional production points, urbanization and agglomeration economies and diseconomies and the like. He then superimposed onto the pattern the concepts of spatial distribution of urban centers and economic activity developed by Christaller and Lösch, and completed the synthesis with the addition of the concept of rings of agricultural activity stated by von Thünen. In making his synthesis Isard emphasized that there is no fundamental inconsistency in the various theories of nodal structure.

Discussing the interaction concepts of nodal regions, Green suggested that an hierarchical structure of cities might be worked into the concept on the basis that various current theories (the central place concept, the theory of metropolitan regions, and gravity models) are three aspects of a single pattern of interrelationships between settlements. The suggested hierarchy in the U. S. would start with the center of greatest activity where certain facilities are to be found uniquely (most likely New York) and dropping down by successive layers as various activities are duplicated in smaller centers. Centers on each level would appear on all lower levels. New York would appear on all levels of the hierarchy since its population is served not only with certain unique facilities, but also with the same kind of activities as are to be found in the smaller centers. Green observed that problems might arise in analyzing the interaction of two centers on a given level of the hierarchy if they are separated physically by a third center which also appears on the next higher level of the hierarchy. He suggested that an empirical study using the number of long distance telephone calls between communities might help define the existing pattern.

[Summary by Gerald A. P. Carrothers]

Essential Elements in the Training of Professional Geographers. Andrew H. Clark, presiding. Procedure: panelists and discussion. Panelists: Hibberd V. B. Kline, Syracuse University; Joseph E. Spencer, University of California, Los Angeles; George Tatham, University of Toronto; R. J. Harrison Church, London School of Economics and Political Science and University of Wisconsin.

Opening the discussion, Spencer presented two suggestions: that seminars in which graduate students explore and develop frontiers of geographic knowledge are superior to extended course work, and that there should be at least one field course for every seminar to put into practice the finding of the experimental studies.

Kline suggested that regional and textbook courses were of least value in developing the professional geographer. The graduate student should work directly with physical geography, demographic studies, political distributions, etc., as the raw materials for the development of regional studies. The graduate student should also be well trained in the systematic fields of geography. More technological and statistical studies should be required. Most important of all, the training of the good professional geographer will depend on the individual program planned for the development of each graduate student, leading through the dissertation to professional work and a wide range of original contributions to the geography profession.

Tatham felt that Canadian geographers had the advantage of combining the philosophies of the European and the United States schools of Geography. This meant fine basic training of undergraduate geographers as done in England, followed by the fine graduate program as developed in the United States. Lecture and field studies are both utilized in the first year of study at both levels followed

by general courses for second year undergraduates in systematic geography and allied courses in history, sociology, etc.; regional studies developing techniques as well as content; French and German; and cartography. He felt that more should be done today to develop geographers who can express themselves vividly and effectively in geographic writing. More attention should also be given to the training of geographers as city and regional planners. A subjective philosophical viewpoint must guide the profession to select that which always indicates our fundamental viewpoints and values in training for professional geography.

Church indicated that, of the 82,000 degree students studying in English Universities and Colleges, 1,500 were majoring in geography. Another 2,500 had geography as one of three or four elected fields of study. He reviewed the development of geography from the elementary school starting with the six-year old child with one or two hours a week, through high school with two or more hours a week. Thus, the university student begins his advanced training after nine to twelve years of study of one to three hours a week. This includes both systematic and regional geography. Honors courses begin in University in combination with other fields such as history, geology, or French.

Students work from recommended reading lists with a minimum of attendance at lectures. Laboratory courses, seminars, and field trips are required. Systematic courses and regional courses especially on British Isles and Europe are basic. Church felt that this method places too much reliance on individual ability and initiative and is beneficial to only the very best student.

Church also described briefly the program of geography studies sponsored by the University of London for African universities and colleges since 1948. Special syllabi are provided for these students on their local environment.

He also referred to his experience with French geographic education where greater intensity of study in the primary and secondary schools is required. Much study of physical geography is giving way to study of cultural geography. Lectures, class work, and field studies are all emphasized.

The panel members were in accord that three excellent systems of preparing professional geographers had been analyzed and that the end products of each might, indeed, be equally well trained.

[Summary by Berenice M. Casper.]

FINANCIAL REPORT ON MONTREAL MEETING

For the interest of the members of the Association, the receipts for the Annual Meeting of the AAG in Montreal were $6,932.75 of which included grants of $1,000 each from the Province of Quebec and McGill University. The expenses of $6,885.65 left an unapplied balance of $47.10. It should be noted that income from the registration fee amounted to only $958. These figures do not include the costs for publishing the program or the actual expenses of the Program Committee, Secretary and the Central Office.

THE AAG HANDBOOK–DIRECTORY

The AAG Handbook–Directory is nearing completion and is now scheduled for publication and distribution during September. This is somewhat later than planned when the Committee began work in February 1956, due to extension of the closing date for receipt of biography cards to May 1, subsequent increases in membership, and the magnitude of the task of reducing the information to standard form.

The Handbook–Directory, in the format of *The Professional Geographer*, will be distributed free to the membership. Copies will be available for sale at $2.50, or for use as mailing lists at $20.

The Handbook section of some 20 pages includes a brief history, present constitution, bylaws, organization and activities, a list of past officers, and membership statistics in tables, graphs and a map.

The Directory section lists the names and addresses of the 1,900 members as of May 1, with biographical information on the 1,300 members who returned the cards. The subject and area index of member-interest includes some 4,000 entries.

COMMITTEE MEMBERSHIP

ELECTED COMMITTEES

Credentials Committee:
William H. Pierson, chairman, Minnie E. Lemaire, and E. Willard Miller.

Honors Committee:
Samuel T. Emory, chairman, Glenn T. Trewartha, and John C. Weaver.

Nominating Committee:
Raymond E. Murphy, chairman, Rayburn W. Johnson, and James J. Parsons.

APPOINTED COMMITTEES

**Executive Committee:*
Clarence F. Jones, Chauncy D. Harris, Burton W. Adkinson, Wallace W. Atwood, Jr., Louis O. Quam, Wilma B. Fairchild, and Edward A. Ackerman.

**Cartography Committee:*
George F. Jenks, chairman, Edward B. Espenshade, Jr., Arch C. Gerlach, Richard E. Harrison, Arthur E. Karinen, George Kish, J. Ross Mackay, Erwin Raisz, Arthur H. Robinson, John C. Sherman, and Robert J. Voskuil.

**Finance Committee:*
Gilbert F. White, chairman, Warren J. Nystrom, Hoyt Lemons, Guy-Harold Smith, and Wallace W. Atwood, Jr.

**Membership Committee:*
Guido G. Weigend, chairman, Lyle E. Gibson, Ross N. Pearson, John W. Morris, and Divisional Chairmen.

**Placement Committee:*
John P. Augelli, chairman, Lois Olson, Betty Didcoct, George K. Lewis, and Walter W. Deshler.

**Publications Committee:*
Wilma B. Fairchild, chairman, Meredith F. Burrill, Walter Kollmorgen, Henry M. Kendall, and Edward A. Ackerman.

Subcommittee on Cartographic Publications:
George F. Jenks, chairman, Edward Espenshade, Jr., Fred W. Foster, Allen K. Philbrick, Arthur H. Robinson, and Robert J. Voskuil.

**Regional Divisions Committee:*
Chauncy D. Harris, Vice President, and Divisional Chairman.

**Research Grants Committee:*
Richard Hartshorne, chairman, Robert Glendinning and one other to be named on acceptance of appointment.

**Constitution and By-laws Committee:*
John Kerr Rose, chairman, Joseph A. Russell, and Howard Roepke.

**Memorials Committee:*
John K. Wright, chairman, Lester Klimm, C. Langdon White, Joseph A. Russell, and Merle C. Prunty, Jr.

*Standing Committee

Air Force ROTC Committee:
Jan O. M. Broek, chairman, Edward B. Espenshade, Jr., Trevor Lloyd, Merle C. Prunty, Jr., Benjamin Thomas, and Shannon McCune.

Handbook–Directory Committee:
Herman Friis, chairman, William W. Abbe, Charles W. Buffum, Charlotte M. Burtis, Catherine I. Bahn, and J. Fred Winkler.

Exchange of Publications Committee:
Marie C. Goodman, chairman, Jerome D. Fellman, Arthur B. Burt, Nordis Felland, Norton Ginsburg, and John W. Coulter.

Geography of the Americas Committee:
Edwin J. Foscue, chairman, Fred Kniffen, E. Willard Miller, and Clyde Kohn.

Geographers in Business Committee:
John W. Reith, chairman, Albert Ballert, George Davis, Stanley Arbingast, and Howard Green.

Geographers in Government Service Committee:
Arch C. Gerlach, chairman, Lloyd D. Black, Louis O. Quam, Henry Rogers, and Harold Sweed.

National Atlas Committee:
Arthur H. Robinson, chairman, Edward B. Espenshade, Jr., Guy-Harold Smith, Clarence W. Olmstead, Wesley Calef, and Walter W. Ristow.

Publications Review Committee:
Chauncy D. Harris, chairman, William Applebaum, William L. Thomas, F. Kenneth Hare, Arch C. Gerlach, Joseph E. Spencer, Edward B. Espenshade, Jr., and Stephen B. Jones.

**Editorial Board of the Annals:*
Stanley D. Dodge, Glenn T. Trewartha, John R. Borchert, Fred B. Kniffen, Harold H. McCarty, Guido G. Weigend, John E. Brush, and Edwin H. Hammond.

Committee on Trends in Training and Placement of Geographers:
Joseph A. Russell, chairman, Howard Roepke, Merle C. Prunty, Jr., Vincent Throop, George Deasy, Joseph E. Spencer, Robert M. Glendinning, G. Donald Hudson, and Divisional Chairmen.

Annual Meeting Program Committee:
Alfred H. Meyer, chairman, Jan O. M. Broek, Frank Keller, George Kish, J. Lewis Robinson, John H. Thompson, and Gilbert White.

Annual Meeting Local Arrangements Committee:
Henry M. Kendall, chairman; others to be listed later.

International Fellowships Committee:
Donald Patton, chairman, Francis Elliott, Fraser Hart, Alexander Melamid, Wallace W. Atwood, Jr., and Warren Nystrom.

DELEGATES

United States National Committee, I.G.U.:
Clarence F. Jones (1957), Guido G. Weigend (1957), Edwin J. Foscue (1958), and Chauncy D. Harris (1959).

American Association for the Advancement of Science: Lester Klimm.

National Research Council: Louis O. Quam (1959).

National Council of Geography Teachers: Norman Carls.

American Council of Learned Societies: Walter W. Ristow (1959).

*Standing Committee

REGIONAL DIVISIONS

EAST LAKES DIVISION

On May 11–12, 1956, the East Lakes Division held its spring meeting at the Michigan State University Biological Station, that occupies the former home of W. K. Kellogg on Gull Lake near Battle Creek, Michigan. The Department of Geography, Michigan State University, served as host. The program included an evening discussion, a business meeting and coffee hour, and an all-day field trip.

On Friday evening Professor Lawrence Sommers, Michigan State University, outlined the role of geography in the curriculum and activities of the Biological Station. The Director of the Station, W. F. Morofsky, talked briefly on the general activities and programs developed there. The main speaker, Prof. I. F. Schneider of the Soils Science Department at Michigan State, discussed the "Soils of Michigan."

At the business meeting following the general discussion, Ross Pearson, University of Michigan, outgoing Chairman of the Division, turned over that office to his successor, Henry L. Hunker, The Ohio State University. AAG President Clarence Jones spoke about various activities of the national organization.

The well-organized Saturday field trip covered some 90 miles in the Gull Lake area. Co-leaders Schneider and Sommers emphasized soil types as they affect land-use but also discussed glacial features, farm types, recreational land-use, and suburban developments.

The programs, the informative field trip, and the generous facilities provided at the Biological Station combined to make this a fine meeting. In all, 55 persons from 11 different institutions participated.

Tentative programs have been arranged for the coming year. The Department of Geography at The Ohio State University has invited the Division to Columbus for the fall meetings, tentatively scheduled for November 2–3, 1956. The theme will be recent trends in the urban-industrial development of central Ohio. The Department of Geography at Kent State University has invited the group to its campus for the 1957 spring meetings, for which the suggested theme is the mineral developments of eastern Ohio.

MIDDLE ATLANTIC DIVISION

On February 16th, the Middle Atlantic Division held its first meeting of 1956 -- a dinner meeting at the Library of Congress. Dr. Robert Klove of the Bureau of Census spoke on "Statistical Areas for Geographical Research." His talk was most informative; of particular interest was the work being done on central business districts. Some of these districts were shown on large city maps with overlays indicating land-use and other pertinent factors.

Dr. Leo Alpert, consultant with the Capitol Research and Development Corporation spoke at the April 18 meeting on "Rainmaking in Puerto Rico." Numerous graphs and pictures clarified many of the problems involved in cloud seeding and their particular application to Puerto Rico. The ensuing discussion brought out additional information.

About 80 participated in the May 19–20 field trip to Pennsylvania, with stops at an Amish farmhouse, an historical museum, and a Mennonite farm specializing in cured beef and pork. The evening featured a Pennsylvania Dutch

dinner and a talk on folklore by Dr. Shoemaker. Park Historian Tilberg conducted the group around the Gettysburg battlefield on Sunday.

On June 20th a dinner meeting was held at the Library of Congress. The speaker was the Hon. E. L. (Bob) Bartlett, Delegate from Alaska whose topic was "Alaska Today." He spoke about the strategic position Alaska has today and its relation to the U. S. He indicated the vast resources available, largely untapped, and the need for development.

The informal luncheons on the first Wednesday of each month at the Tally Ho will continue during the summer. Out-of-town geographers are cordially invited to attend when in Washington. The invitation also applies to the annual family picnic to be held in Rock Creek Park on the afternoon of August 15, the person to contact being the Middle Atlantic Division Secretary, Charlotte Burtis.

PACIFIC COAST DIVISION

The Association of Pacific Coast Geographers, the Pacific Coast Division of the AAG, held its annual meeting at the University of Washington, Seattle, on June 14–16, 1956, in conjunction with the Pacific Division of the American Association for the Advancement of Science. Papers were presented at four half-day sessions presided over by Drs. H. H. Martin, J. Ross Mackay, H. Bowman Hawkes, and Samuel N. Dicken. Out-of-town members attended a social gathering and buffet dinner at the home of Drs. Howard Martin and Frances Earle on the evening of June 14. President H. Bowman Hawkes' address at the Annual Banquet on June 15 was entitled "Conservation: Retrospect and Prospect." Francis Schadegg was toastmaster; attendance was 68. The meetings concluded with an excursion by boat around the Seattle waterfront on the morning of June 16.

At the Annual Business Meeting on Friday, June 15, AAG Vice President Chauncy Harris spoke on the activities of the AAG and its committees. Appreciation was expressed to the Geography Department at the University of Washington for the efficient way in which they provided facilities for the meetings, the social events, and the map display. Staff members especially active in local arrangements were Drs. John Sherman, Howard Martin, Frances Earle, William Garrison, John Eyre, and Douglas Jackson. The group confirmed the Executive Committee's acceptance of the resignation of President-elect Schadegg who will be overseas next year, and its appointment of H. Louis Kostanick as 1956–57 President and John C. Sherman as Vice President. The other officers are Willis B. Merriam,. Secretary–Treasurer, and Joseph E. Spencer, Editor of Yearbook.

ANNOUNCEMENTS AND REPORTS

A NEW FOUR-SHEET PLANNING MAP OF ANTARCTICA

In 1929 W. L. G. Joerg wrote: "This generation is the last that will have the opportunity of witnessing the exploration of a continent."[1] Now, 27 years later, Antarctica is once again the target of renewed and intensive exploration that will probably unveil that part of the continent not yet seen.

In 1928 the American Geographical Society published a four-sheet map of the Antarctic in color on a scale of 1:4,000,000, based on the results of some 75 scientific expeditions and all other surveys and data then available. The compilation scale was 1:4,000,000. The map filled a real need, and appeared in time to be used by the first Byrd Expedition, the Wilkins–Hearst Expedition and others later.

With the 1928 American Geographical Society map as a base, Dr. Hans-Peter Kosack, of Remagen, Germany, revised and otherwise improved this map and in 1954 issued a new four-sheet map, printed in color by VEB Geographisch-Kartographische Anstalt, Gotha. These sheets were published as Tafels 14, 28, 46, and 47, at the scale of 1:4,000,000, in *Petermann's Geographische Mitteilungen*, 98 Jahrgang, 1954. The Kosack map reflects most published surveys available to the author up to 1954, but not the considerable body of unpublished information deriving from the activities of various American expeditions since 1928.

The importance of an up-to-date map comprising all recent surveys, both published and unpublished, for use in planning the program of the International Geophysical Year 1957–58, prompted the decision by the Antarctic Committee of the United States National Committee for the I.G.Y. to sponsor a complete revision of the A.G.S. map of Antarctica on a scale of 1:3,000,000.

As in 1928, so again in 1955, the American Geographical Society compiled the new map of Antarctica from all data available to the present. The new compilation was drawn on Brutex tracing cloth[2] in four sheets, size 42 x 42 inches. Full cooperation was given to the Society by the U. S. Navy Hydrographic Office and the U. S. Board on Geographic Names. In addition, the survey results of some recent American Antarctic expeditions are on file in the National Archives. Photostatic copies of important surveys were procured and used by the Society in compiling the new map. Black-and-white contact prints of the four-sheet map of Antarctica were made available in November 1955. These were used by U. S. Task Force 43 and other expeditions, some of which are in the field at the present time.

Nomenclature of Antarctic features presents some interesting problems. For the new map of Antarctica, use was made of the *Gazetteer of the Falkland*

[1] Explanatory Booklet to accompany a map of the Antarctic with an inset map of The Antarctic Archipelago incorporating the results of the Wilkins–Hearst Antarctic Expedition of 1928–29, published by The American Geographical Society, 1929.

[2] "Brutex" is a relatively new tracing cloth, No. 378 in Charles Bruning Co. catalog. It has a matte finish, is a highly translucent, permanent cloth that will not yellow with age. It is moisture-proof, water-resistant, and suitable for drawing in pencil or ink. It keeps it size well.

Island Dependencies, published in September 1953, by the Antarctic Place-Names Committee, British Foreign Office, and of the U. S. Board on Geographic Names *Special Publication No. 86*, May 1947, with *supplements No. 1*, August 1949, and *No. 2*, April 1951. (Special Publication No. 86, together with these two supplements, had corrections by hand to reflect 1955 status of the names included.) Finally, the names on the map were checked by the U. S. Board on Geographic Names. United States recommendations were in general adopted throughout.

The map is drawn on a polar stereographic projection with a nominal scale of 1:3,000,000 in latitude 71° (approximately 48 miles to one inch). Elevations and depths are shown in meters. Generalized contours are spaced at 200 m., 500 m., 1000 m., 1500 m., etc., and at 500 meter intervals thereafter; sea-bed contours are at 200 m., 500 m., 1000 m., 2000 m., and at continuing 1000-meter intervals thereafter. Glaciers and ice-shelf fronts are indicated in their most recently surveyed locations, with dates showing when these positions were observed.

In the upper left corner of the Pacific Quadrant are the title of the map, scales in miles and kilometers, and a list of conventional signs. In the upper right corner of the American Quadrant is a hemisphere map on an orthographic projection, scale 1:58,000,000, showing the relation of the United States to Antarctica. The status of mapping in the Antarctic, as of December 1955, is shown on an insert map (scale, 1:18,000,000) in the lower right corner of the African Quadrant. On this inset are indicated: (1) accepted astronomically-determined positions; (2) areas with contoured relief on scales of 1:250,000 or greater; (3) areas mapped by reconnaissance, chiefly by aerial photography; (4) approximate coverage by vertical, trimetrogon, and independent oblique photography; (5) approximate coverage of areas seen from the air; and (6) principal photographic flight lines. Antarctica in relation to the other continents is shown on an inset map using a polar azimuthal equal-area projection. This inset map, in the lower left corner of the Australian Quadrant, is on a scale of 1:76,000,000, and also shows:)1) probable extreme limit of pack ice in January; (2) 32° F. isotherm for January (warmest month); (3) extreme limit of pack ice in August and September (maximum season); and (4) extreme limit of icebergs.

The map will be kept up-to-date for at least the next two years during the International Geophysical Year. Black and white contact prints of the map on the scale 1:3,000,000 may be obtained from the American Geographical Society, Broadway at 156th Street, New York 32, N. Y., at $7 per set of four sheets. The map is also available at a scale of 1:6,000,000 on a single sheet (42 x 42 inches), printed in black (for names and line work) and two shades of blue (for water areas and ice shelves). Names on this printed form have been revised to March 12, 1956.

—William Briesemeister

THE REGIONAL SCIENCE ASSOCIATION

The Regional Science Association is an informal organization of persons who are interested in the active exchange of ideas and information on problems of regional analysis and development. Members are drawn chiefly from the various social sciences and city planning, although there are members from other disciplines such as architecture, law, and engineering.

The Association originated with a small group of persons who, under the stimulus of Walter Isard, met for informal discussion sessions during the annual meetings of various social science organizations. Since that time two formal annual meetings of the Association have been held, the first in Detroit in December 1954, and the second in New York in December 1955. Whenever possible, informal joint sessions are arranged during the annual meetings of other related

organizations, such as the session in Montreal during the convention of the Association of American Geographers, which is reported elsewhere in this issue.

Papers and proceedings have been published for the first annual meeting and are in process of publication for the second. Periodically, a newsletter is circulated by Walter Isard containing information of interest to the members. At the last general meeting it was voted that there be established a voluntary contribution of one dollar from each member to help defray costs of publication.

Persons interested in joining the Association (i.e., being placed on the mailing list) should contact Walter Isard at: Room 7–344, M.I.T., 77 Massachusetts Avenue, Cambridge 39, Massachusetts, until September 1. After that dates inquiries should be addressed to him at: Department of Economics, Wharton School, University of Pennsylvania, Philadelphia 4, Pennsylvania.

COLUMBUS ATLAS DISTRIBUTOR

Members wishing to order the Columbus Atlas may do so from McGraw–Hill Company, the western hemisphere distributor. The fact was inadvertently omitted from the review in the November 1955 issue of *The Professional Geographer.*

SAMUEL WHITTEMORE BOGGS PAPERS

Mrs. Boggs has given the Library of Congress the papers of her late husband, consisting of some 4,000 pieces of correspondence, articles, reports, notes, and manuscripts. The papers will be available for use in the Manuscripts Division when their organization is completed.

AMERICAN METEOROLOGICAL SOCIETY MEETINGS

A special meeting on solar-weather research will be held on July 25–27 at the University of Colorado, coinciding with the last days of a six-week seminar. Inquiries may be directed to the Program Committee Chairman, E. D. Farthing, c/o Trans World Airlines, 10 Richards Road, Kansas City, Mo.

The national meeting of AMS will be held in Albuquerque, N. M., on September 5–7. Papers offered now will be accepted for presentation. The Program Chairman is George T. Gregg, University of New Mexico, Box 153, Albuquerque, N.M.

A Conference on Climatology will take place at Asheville, N. C., on October 29 – November 1, with sessions on synoptic climatology, industrial climatology, marine climatology, agricultural climatology, and other topics for which enough papers are submitted. Suggestions are invited for a workshop on electronic processing of data. August 15 is the deadline for receipt of titles, brief abstracts, time and projection requirements. Send to Leslie Smith, Director, National Weather Records Center, Asheville, N. C. A special invitation to participate has been extended to members of the Association of American Geographers.

NEWS FROM GEOGRAPHIC CENTERS

THE SYRACUSE UNIVERSITY FIELD COURSE

The Syracuse field course in geography is recognized as an essential part of the preparation of professional geographers, whether they plan to devote themselves chiefly to teaching, to research, or to other pursuits. It is a five-week, six-credit summer course required of all graduate students. It is strongly recommended for undergraduates who plan to continue on in professional geography, and may be taken either preceding or following the senior year.

The staff is composed of two graduate faculty members and a graduate student assistant. Headquarters for the field course have been in various places in northeastern United States. During the last few seasons its location has been in the geographically and historically rich Genesee country south of Rochester, New York, an area that was the nation's "bread basket" during Erie Canal days. Farming as a way of life still predominates despite the growth of metropolitan areas nearby.

The course endeavors to provide students with experience in applying various data gathering techniques in the field, familiarity with the geography of one area, and experience in setting up a specific field problem and carrying it through to its solution.

The student spends his entire work day in the field, weather permitting. Evening seminars offer an opportunity to discuss ways and means of proceeding in the field work. The first week and a half is devoted to practice in the various map making, recording, and interviewing techniques, and to several carefully planned reconnaissance trips. At the outset the students are advised to keep their eyes open for problems that the group might work on. During evening seminars these various problems are screened until one has been selected as a basis for a group project during the following three and one-half weeks. The project is usually formulated within the framework of three broad requirements: (1) that it be of such nature that all members of the field group could cooperate in a joint investigation, (2) that it provide experience in the utilization of a wide variety of field techniques, and exposure to a wide variety of geographic phenomena, (3) that it provide experience in organizing, interpreting, and presenting the results of material collected in the field.

Field work is done by teams of two. Data collected are transferred to master maps kept in the office. The finished product usually includes a series of maps relative to the problem, and a short report prepared jointly by all members of the group which analyzes the findings and the adequacy of the solution resulting from from the project.

Advanced work is open to, though not required of, graduate students who have had at another institution the equivalent of the experience outlined above. Such advanced students select field problems on which they work independently, but with the advice and guidance of the staff. These field problems may become the basis for theses at Syracuse.

In both the regular work and the advanced projects emphasis is placed upon recording on maps and air photographs. Both single-feature and double-feature mapping are carried on if appropriate to the problem. Air photos ordinarily serve as the base on which such things as land use, operating units (farms), field character and patterns, buildings, soils, etc. are mapped. Air photos are especially valuable as they may be used for office stereo work as well as a field base. The techniques of note taking on maps and in note books, personal interviewing, and

circulation of questionnaires are employed. County agents, SCS personnel, municipal and county offices, local libraries, etc. are utilized as sources of additional information.

The field is the place where observable facts are gathered and experience is obtained in making the initial transfer from facts to map symbols. Unless students, teachers, and researchers in the field of geography have had a basic course in field methods, the geography they engage in must necessarily be somewhat removed from reality. The field course at the beginning of graduate work brings home to the professional student the realization that geographical knowledge, whether theoretical or applied, stands largely on direct field observation.

—John H. Thompson

UNIVERSITY OF TEXAS

The Committee on Eastern European Studies is organizing a two-day conference on "Soviet Expansion," to be held in Austin, Texas on October 11–12, 1956, supported by a Social Science Research Council grant.

Papers will be read on geographic factors in Soviet expansion, recent developments in Soviet law, trends of Soviet foreign policy in Asia, the Soviet foreign aid program and others. Ten minute comments will be given after each paper. Among the participants will be Professors John Morrison, Geography; John Hazard, International Law; Lobanov-Rostovsky, History; Donald Hodgman, Economics; and faculty members of different southwestern universities.

Those interested in attending or participating in this conference are requested to communicate with Professor George W. Hoffman, Chairman, Committee on Eastern European Studies, Department of Geography, The University of Texas, Austin 12, Texas.

UNIVERSITY OF ILLINOIS, CHICAGO

The geography staff at the Chicago Division of the University has had an eventful year. Geographers continue to participate in the interdepartmental introductory courses in the Social Sciences. Mary McRae Colby and Alden Cutshall have the responsibility for one of them, "World Patterns and World Problems," and Dr. Cutshall is the representative of the Social Science Division on the College General Education Committee.

Mrs. Colby has been elected to a three-year term on the Board of Directors of the Chicago Geographical Society. Work on her doctoral thesis at the University of Chicago continues as University and domestic duties permit.

Mrs. Mildred I. Finney has just completed a term as Secretary–Treasurer of the Illinois Geographical Society and has been elected President for 1956–57. She has completed the research and much of the writing for a doctoral thesis on the starch industry, and has presented aspects of the research to suburban community service clubs.

The past semester George A. Rheumer offered a course in Conservation of our Natural Resources, the first time this course has been offered at the Chicago Division. Dr. Rheumer has accepted a Visiting Professorship at the University of Manitoba for their summer session.

Alden Cutshall continues his interest in the Philippines. He presented an invited paper, "Industrial Progress in the Philippines," at the Indianapolis meeting of the National Council of Geography Teachers in November. This paper, published in the March issue of the *Journal of Geography*, is a companion article to "Agricultural Progress in the Philippines" which appeared in the *Journal* a few months

earlier. At the AAG meeting in Montreal he presented "The Philippine Sugar Industry: Foundations and Prospects."

Dr. Cutshall is Acting Head of the Division of Social Sciences for the summer session. Elmer Ahlman of the newly-created University of Wisconsin at Milwaukee is the second member of the geography staff this summer.

HOFSTRA COLLEGE

Beginning in September the Department of Geology at Hofstra College will become the Department of Geology and Geography, with Roger H. Charlier as head, and will offer the B.A. degree with geology major. Previously, geology was available as a major only in combination with another subject such as biology. A geography-major program is under consideration.

THE NATURE OF GEOGRAPHY

Richard Hartshorne

Copies of the 4th edition may be obtained from the Central Office of the AAG, The Library of Congress, Washington 25, D.C. The price is $2.00 plus 20¢ for handling in the United States, and 25¢ for handling in other countries.

In order to aid students, as in the past, this volume is published by the Association and sold at cost, with no royalties to the author.

PERSONAL NEWS

EDWARD L. ULLMAN, Univ. of Washington, writes that "The past two months have been the most intensive travel and field work that I have ever done, the more so because everything was so new and I was determined to take it all in. I did, but it was almost vice-versa." He is with a Stanford Research Institute mission making a comprehensive transportation survey of the Philippines under ICA auspices. His address until late August will be USOM/ICA, APO 928, San Francisco, Calif. Beginning in late September he will be a Fulbright Research Scholar for a year at the University of Rome.

ROBERT MONAHAN, Western Washington College of Education, is visiting assistant professor at the University of Washington for the first term of the summer session.

HOWARD J. CRITCHFIELD, Western Washington College of Education, will be a visiting lecturer in the Department of Geology, Geography, and Mineralogy at the University of Colorado during the second term of the summer session.

ARNOLD COURT, after receiving the Ph.D. from the University of California in June, joined the staff of the California Forest and Range Experiment Station of the U. S. Forest Service in Berkeley, California, as meterological advisor.

KARL STACEY, Kansas State College, will be in Japan during the next school year as a Fulbright lecturer in geography at the Tokyo Institute of Technology.

DR. JOHN LYON RICH died suddenly on May 21, 1956, as the result of a heart attack.

He was born at Hobart, Delaware County, New York, December 1, 1884. Graduating from Cornell University in 1906, he received his Ph.D. there in 1911. He was internationally known in the field of petroleum geology. On the staff of the University of Cincinnati from 1931 until his retirement in 1955, he then became Emeritus Professor. Among various important positions he held were those of Technical Consultant for Petroleum Administration for the Government in World War II, and member of the American War Production Mission to China. He was Editor of the Bulletin of the American Association of Petroleum Geologists from 1926 to 1929. During World War I he served as Captain in the U. S. Army.

Dr. Rich belonged to many scientific societies and was the author of 120 publications, among the better known of which is "The Face of South America," published by the American Geographical Society.

NEW PUBLICATIONS

Forest and Range Policy: Its Development in the United States. Samuel Frank Dana. McGraw–Hill., New York. 1956. xi and 455 pp.

In tracing the development of forest and range policy from colonial times, Dana also illuminates the economic and historical geography of the United States. A 53-page chronological list of significant events in resource policy development from 1609 to December 1955 is appended. Though written as a textbook it is also useful for reference, especially in the field of conservation, and is interesting reading besides.

Population Estimates and Projections for Selected Countries 1954 to 1957. International Population Reports, series P – 91, no. 2. 1955. 6 pp. For sale by the Bureau of the Census, Washington 25, D.C. 10 cents.

The 38 countries plus the Saar and West Berlin that are covered in the report contain about half the world's population. The methods used and the reasons for applying different methods to some countries are explained. For comparison, the population at the last census and estimates for July 1, 1938 and January 1, 1950 are also shown for each country listed.

Planning 1955. American Society of Planning Officials. 1313 E. 60th St., Chicago 37, Ill. 1956. 216 pp. $4.00.

This volume, containing selected papers from the annual planning conference of the Society, held jointly with the Community Planning Association of Canada on September 25–29, 1955 in Montreal, inaugurates a change of publication policy. The annual edition of *Planning* will no longer be a record of conference proceedings.

Subjects covered by the included papers are: Urban Planning Problems in Canada; Urbanization, Industrial Development and Social Change; The Impact of Automation; Mental Health and Community Planning; Conservation and Planning Go Together; a clinic on Churches in the City Plan; Metropolitan Government – Can It Work?; Suburban Development Problems; a clinic on Development Timing; Is Zoning Wagging the Dog?; St. Lawrence Seaway; Is This Trip Necessary?; a clinic on Public Opinion Surveys; Urban Renewal; a clinic on Small Town Planning Problems; Planning Education; and a Commissioners Session. The volume also includes a record of the Society's annual business meeting and new officers elected.

Rhodesia and Nyasaland. Gazetteer No. 17. Board on Geographic Names. For sale by Supt. of Documents, Government Printing Office, Washington 25, D.C. ii and 214 pp. $1.25.

The 17,000 entries in this official standard name gazetteer include about 8,300 for Northern Rhodesia, 5,900 for Southern Rhodesia, and 2,800 for Nyasaland. This corresponds approximately to the name density on maps at a scale of 1:500,000 and includes many names not readily available in other publications. Although the governments of these three areas have acted upon relatively few names to date, each has established an authoritative committee or board and has made a beginning. The results have been utilized in this volume.

Costa Rica. Gazetteer No. 18. Board on Geographic Names. For sale by Supt. of Documents, Government Printing Office, Washington 25, D.C. ii and 48 pp. 35 cents.

This gazetteer contains about 3,700 entries, corresponding approximately to map coverage at 1:400,000 and is based on the latest available information from Costa Rica. It is the sixth volume on a Latin American country in this series.

Colorado Dam Controversy. Angus M. Woodbury. Scientific Monthly, vol. 82, no. 6, June 1956, pp. 304–313.

A brief review and analysis of events, attitudes and statutes involved in the Upper Colorado controversy. In his conclusions the author states that the basic problem is the danger of establishing populations dependent upon Colorado River water in excess of that available and now allocated under a regional compact, for, he says, "it would be difficult if not impossible to take water away from such people even if their claims are established by unconventional methods."

Mapping the Land. Arthur H. Robinson. Scientific Monthly, vol. 82, no. 6, June 1956, pp. 294–303.

Pointing out that "in the last analysis all maps are based on the topographic mapping of the land and the hydrographic charting of the sea," the author reviews the evolution of topographic mapping and describes in some detail the processes now employed in topographic map compilation and reproduction. He comments that "the shaded relief maps being produced now [by the Geological Survey] are works of art ..... one of the greatest bargains available today." The article includes a world map showing areas fairly well topographically mapped and those mapped very poorly or not at all.

St. Paul's Journeys in the Greek Orient. Henri Metzger. Translated by S. H. Hooke. New York. Philosophical Library. 1955. 75 pp. $2.75.

Nineveh and the Old Testament. Andre Parrot. Translated by Beatrice Hooke. New York. Philosophical Library. 1955. 96 pp. $2.75.

Metzger, tracing St. Paul's journeys in present day Turkey and Greece, sets forth briefly the physical and cultural setting of the places and regions where, and at the time when, Christianity made its amazing progress during its earliest period. Biblical names are equated with modern ones and there are small sketch maps of each of the journeys.

Parrot, the Curator-in-Chief of the French National Museum, puts together the archeological evidence and the Biblical accounts to portray the tyrannical role of Nineveh in the first millennium B.C., ending with the fall and destruction of the city in 612 B.C. This information sheds much light not only on the Old Testament but also on the cultural heritage from those times.

International Geophysical Year. A Special Report prepared by the National Academy of Sciences for the Committee on Appropriations of the United States Senate. Senate Document No. 124, 84th Congress, 2nd Session. 1956. 27 pp.

This report on the scientific programs planned by the United States and on activities to date contains considerable information previously unpublished. Three maps show, respectively, location of United States I.G.Y. stations over the world except Antarctica, the path of the orbit of the proposed earth satellite, and the location of Antarctic stations planned by all countries. The text explains the significance and interrelation of the various activities planned.

Educational Exchanges: Aspects of the American Experience. National Academy of Sciences–National Research Council. Washington, D.C. 1956. 74 pp. Free.

This is primarily a report of a conference at Princeton University on December 2–4, 1954, sponsored by the Committee on International Exchange of of Persons of the Conference Board of Associated Research Councils. In the preface M. H. Trytten, Chairman of the Committee, points to the rapidly increasing postwar flow of research scholars, specialists and university lecturers between the United States and the cultural centers of Europe and Asia. This inquiry into the purposes and results of the exchange programs was financed by a Ford Foundation grant. The Princeton conference was preceded by months of preparation of source material, by many committee meetings to identify the major points at issue, and by the preparation of special papers by Ralph L. Beals and Walter Johnson.

The chapters in the report are: Present Programs of Educational Exchange; Some Problems of Senior Exchange as they Appear in the Fulbright Program; Report of Discussions at the Princeton Conference; Future Needs and Opportunities. Appended are Beal's and Johnson's papers, a selected bibliography, and a list of the 56 Conference participants.

Arctic Bibliography, Vol. VI. Marie Tremaine, editor. Department of Defense. 1956. xii and 1208 pp. For sale by Supt. of Documents, Government Printing Office, Washington 25, D. C. $4.50.

The 5,285 entries in this sixth volume of the Arctic Bibliography, prepared under the direction of the Arctic Institute of North America, brings the total of annotated listings up to 38,410. The subjects in this volume for which there are 800 or more entries are geology and mineral resources; geography; zoology; medicine and physiology; others with 300 or more are engineering (navigation, aeronautics, construction, transportation); botany, agriculture and forestry; meteorology, oceanography; anthropology and sociology; and exploration. More than half (63%) of the listed publications are in English; nearly a fourth (23%) are in Russian; the remainder are mainly in German, French, Scandinavian languages, Italian or Japanese; a few are in one of ten other languages.

Main listings are alphabetical by author. The index is alphabetical by subject and area with authors following each topic.

The Descent of Pierre Saint Martin. Norbert Casteret. Translated by John Warrington. The Philosophical Library, New York. 1956. xi and 160 pp. illust. $4.75.

Translated and rearranged from *Trente Ans sous Terre*, this book is principally an account of the 1950–54 explorations of the Gouffre de la Pierre Saint-Martin, in the Basses-Pyrénées, France, to a final depth of 2,389 feet. This was at that time the deepest known cavern, entered by a vertical shaft 1,135 feet deep. Below, an inclined series of chambers and tunnels lead down to the final chamber that is about 220 yards long, 130 yards wide and nearly 330 feet high. The shorter second part of the book deals with Casteret's observations in the course of exploration of a score of other caverns in and near the Pyrenees.

Handbook on the International Exchange of Publications. 2nd edn. UNESCO 1956. 509 pp. $7.00.

The first edition of this Handbook, published by UNESCO to promote rehabilitation and development of libraries, was based on 1948–49 information. The second edition is the logical outgrowth of great increase in the volume of scientific publications and in interest in exchange of such literature, to which the first edition itself contributed.

The volume is in English, French, and Spanish. Part I has chapters on the different forms of exchange, the methods of exchange, conventions and agreements for exchange, transport and customs, and a bibliography. Part II lists, for international organizations and for 84 countries and 37 territories, the publications reported as exchange possibilities, with the name and address of the publishing institution. The listing is in 16 subject categories, of which geography and ethnology form number 8.

Teaching and Research in Geography in the Soviet Union. A translation of Jean Dresch's "L'Enseignement de la Géographie et la Recherche en Union Soviétique," *Annales de Géographie*, no. 345, Vol. 64 (Sept.–Oct. 1955), pp. 378–386. Translated and Appendix added by Chauncy D. Harris. A limited number of copies are available free from the Department of Geography, University of Chicago. Mimeographed.

Jean Dresch was a member of a delegation from the Academy of Sciences of France that went to the Soviet Union in July 1955, at the invitation of the Academy of Sciences of the USSR. The paper comments on the geography faculty and courses at Moscow in some detail and at Leningrad briefly, and describes the organization and functions of the Institute of Geography of the Academy of Sciences and of the Geographical Society. Harris has provided as an appendix a Table of Key Geographers in the Soviet Union, listing the incumbents of 35 positions in the institutions referred to above.

Navigation Dictionary. U. S. Navy Hydrographic Office. 1956. For sale by authorized Sales Agents of the U. S. Navy Hydrographic Office or by the Supt. of Documents, Government Printing Office, Washington 25, D. C. iv and 253 pp. $2.00.

This handy reference includes many navigational terms and expressions that geographers do not regularly encounter, at least in the connotations listed. Only the meanings pertinent to navigation are given. Recent advances in navigational equipment, adding considerably to the vocabulary, seem to be well covered. Among the meteorological terms included are many designating local winds all over the world.

The Penguin Atlas of the World. Penguin Books, Ltd. 1956. xv, 76 and 80 pp. 8 x 5½ inches. $2.50.

The 80 pages of maps in color and the index with some 15,000 entries constitute an extraordinary world atlas at the price. Most of the sectional maps portray broad relief features by shading in light tint. The boldly colored continent maps at scales of 25 M to 60 M show relief in color and diagrammatic shading, and, by symbols, natural vegetation and areas in cultivation. The sectional maps are on scales of 1:2 M for Great Britain, 1:6 M for most of the rest of Europe, 1:20 M for other parts of the world with areas of special interest at 1:8 M. The end papers are index maps showing the coverage of the individual maps.

Place name density is not heavy (there are about 25 each in Ohio and Pennsylvania) to preserve legibility. All names appearing on the maps are indexed. "Despite tradition it [the index] has been placed before the maps, to encourage the fullest use to be made of it," say the publishers on the dust cover. The spelling of names in general follows the policies of the British PCGN and the U. S. Board on Geographic Names.

The errors noted are few and, while the atlas does not take the place of a large one, particularly with reference to the United States, it is compact, reliable, inexpensive and an excellent piece of craftsmanship.

Date.....

The Secretary, Association of American Geographers:

I wish to apply for membership in the Association of American Geographers and submit the following information to support my application:

☐ Associate (Annual dues $7.50)

Persons who are actively interested in the objectives of the Association but who do not meet the qualifications for Membership, as below. Please provide data in the blanks below as fully as it applies in your case.

☐ Member (Annual dues $10.00)

Mark only one square but supply data on all lines that apply to your situation.

☐ A. A graduate degree in GEOGRAPHY (or equivalent education).

Degree(s), date(s) and institution(s).....

.....

Title(s) of Thesis(es).....

.....

Department(s) in which written.....

Person(s) who supervised thesis(es).....

.....

.....

☐ B. An undergraduate degree with a major in GEOGRAPHY and at least two years' full-time service as a professional geographer.

1. Undergraduate Work
   Degree, date and institution.....
   Major subject.....
   Number of Geography courses and total number of quarter or semester hours (specify which).....
   .....
   Name of Geography teachers.....
   .....

2. Graduate work completed
   Institution(s) and date(s).....
   Subjects taken and total number of hours in Geography (specify whether quarters or semester hour(s).....
   .....

3. Professional experience as a Geographer
   Title(s) of position(s).....
   Unit, bureau, agency, firm, department or school in which located with dates.....
   .....
   Name(s) of supervisor(s).....
   .....
   Nature of work.....
   .....

☐ C. No degree in GEOGRAPHY but have made significant professional contributions to the field of geography.

1. Contributions to geographical knowledge (research, publication, exploration, etc.)
   Describe and cite specific references and dates on separate page.
2. List the names of two professional geographers who are acquainted with the work you have done:
   a. ..... b. .....
3. Academic training
   Fill in either A and/or B above striking out the word GEOGRAPHY.

If the space provided in the blank is insufficient for the data in your case, write on a separate page.

Signature .....

Mailing address: Name .....

Street .....

City....., State.....